

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POLARIZED LUMINESCENCE OF PAIRED THALLIUM CENTERS IN ALKALI HALIDE
CRYSTALS -U-
AUTHOR--ZAZUBOVICH, S.G.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(4), 728-36
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--THALLIUM, ALKALI, HALIDE, CRYSTAL, LUMINESCENCE, POTASSIUM
BROMIDE, CHLORIDE, CRYSTAL POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0924 STEP NO--UR/0051/70/028/004/0728/0736
CIRC ACCESSION NO--AP0121526
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT79

2/2 021

GIRC ACCESSION NO--AP0121526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (TL PRIME POSITIVE) SUB2 CENTERS IN KI-TL1, RBI-TL1, CSI-TL1, AND KCL-TLCL PHOSPHORS WERE INVESTIGATED. TL(I) CONC. VARIED FROM 10 PRIME NEGATIVE3-1 MOLE PERCENT. THE STUDY INDICATED THAT THE PRIMARY EMITTERS OF THE (TL PRIME POSITIVE) SUB2 CENTERS ARE ORIENTED ALONG THE C SUB4 AXIS. A MODEL WAS PROPOSED, CONSISTING OF A TL-X-TL (X EQUALS HALIDE) COMBINATION IN CRYSTALS WITH A NACL LATTICE, AND TL PRIME POSITIVE TL PRIME POSITIVE PAIRS IN CRYSTALS WITH A CSCL LATTICE. POLARIZATION AND LIFETIME OF THE EXCITED STATE IN THE INVESTIGATED PHOSPHORS RESEMBLED THOSE IN KBR-PB AND KCL-BI CRYSTALS, AND WAS EXPLAINED BY THE FORMATION OF PARTIALLY COVALENT BONDS BETWEEN THE ACTIVATOR AND THE HALIDE IONS.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EUROPIUM (II) CENTERS IN POTASSIUM IODIDE -U-
AUTHOR--(04)-VARENKO, G.D., AVDONIN, V.P., ZAZUBOVICH, S.G., PLACHENOV,
B.T.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(2), 284-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--SINGLE CRYSTAL, LUMINESCENCE, EUROPIUM, CRYSTAL LATTICE
STRUCTURE, BETA IRRADIATION, POTASSIUM IODIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0087
CIRC ACCESSION NO--AP0054834
UNCLASSIFIED

2

2/2 026

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054884

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LUMINESCENCE OF KI SINGLE CRYSTALS CONTG. EU SUB3 WAS INVESTIGATED. THESE CRYSTALS EXHIBIT A WEAK BAND AT 480 NM, IN ADDN. TO THE MAIN BAND AT 428, WHEN THE CONCN. OF EU DOES NOT EXCEED 10 PRIME NEGATIVE4 MOLE PERCENT. CONVERSION OF 1 BAND INTO ANOTHER WAS INVESTIGATED AS A FUNCTION OF THE CONCN. OF THE F CENTERS, TEMP., AND BETA IRRADN. POLARIZATION CHARACTERISTICS OF THE LUMINESCENCE WAS ALSO DETD. THE 480 NM LUMINESCENCE IS DUE TO THE PRESENCE OF EU(I) IN THE LATTICE AND IS ASSOCD. WITH POINT DEFECTS, PROBABLY ANIONIC VACANCIES. POLARIZATION STUDIES INDICATE THAT DEFECTS ARE IN THE DIRECTION OF THE C SUB4 CRYST. AXIS.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PREPARATION OF FIBERS FROM A MIXTURE OF POLYACRYLONITRILE WITH
POLYMETHYL METHACRYLATE -U-
AUTHOR-(03)-KRASOVSKAYA, S.B., ZAZULINE, Z.A., KNOKIN, A.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLOKNA 1970, (2), 19-22
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--POLYACRYLONITRILE FIBER, POLYMETHYLMETHACRYLATE, WEAR
RESISTANCE, TENSILE STRENGTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0045 STEP NO--UR/0183/T0/000/002/0019/0022
CIRC ACCESSION NO--AP0132340
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132340

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYACRYLONITRILE FIBERS WERE
MODIFIED WITH POLY(METHACRYLATE) OF MOL. WT. 7 TIMES 10 PRIMES (IN
90:10 RATIO) TO GIVE FIBER BLENDS HAVING SUPERIOR WEAR RESISTANCE AND
FLEXURAL STRENGTH, GOOD TENSILE STRENGTH, AND SLIGHTLY LOWER
LIGHTFASTNESS.

FACILITY: MTI, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 535.853:535-14

STANEVICH, A. YE., ZAZVORKA, V. V., POLUSHKIN, YU. I., and RUDYAVSKAYA, I. G.,
Candidates of Technical Sciences

"A Spectrophotometer for the Long-Wave Infrared Region"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 6, Jun 73, pp 32-37

Abstract: A description is given of the first domestically produced two-beam SP-143 spectrophotometer for the 20-500 micron region, and results of tests on an experimental model are presented. The instrument is designated for automatic recording of the absorption spectra of solid, liquid, and gaseous objects at various temperatures, as well as reflection spectra of solid specimens.

Spectra of atmospheric water vapor, recorded during single-beam and two-beam operation of the instrument are presented. The spectral resolution of the instrument is $0.5-1.0 \text{ cm}^{-1}$, the precision is to within $\pm 0.5 \text{ cm}^{-1}$, the photometric exactness is to within 1-2%, and the purity of the spectra is, as a rule, not less than 99%. 3 figures. 1 table. 6 references.

1/1

- 132 -

Acc. Nr: **AP0044698**

Ref. Code:
UR 0497

PRIMARY SOURCE: **Klinicheskaya Meditsina**, 1970, Vol 48,
Nr **2**, pp **25-29**

RADIOISOTOPE SCANNING OF THE LUNGS

V. S. Afanas'yeva, T. A. Finikova, A. N. Zbanfa, Yu. V. Balabanov,
T. A. Chernyakova

Summary

Scanning opens up new vistas in the diagnosis of circulatory disturbances in diseases of the lungs. The report is based on an analysis of investigations carried out in 109 patients suffering from different diseases of the lungs (embolism of the pulmonary artery, pulmonary tuberculosis, malignant tumors). After roentgen-tomographic investigation scanning of the lungs was performed 5-10 minutes after intravenous introduction of 200-300 μ C of radioiodine-labelled macroaggregate albumin. The scintigrams reflected the degree of vascularization of the pulmonary tissue and enabled to establish the volume of disturbances by the presence of "silent" zones and reduction of the radioactivity. The technique is simple and safe for the patients.

REEL/FRAME
19771433

02 DI

USSR

UDC: 632.954+631.8

ZBARSKIY, E. SH., Scientific Research Institute of Plant Protection,
Tashkent.

"Effectiveness of Pentachloronitrobenzene (PCNB) and Fertilizers Against
Cotton Wilt"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 30-34

Abstract: A study is presented of the effectiveness of the fungicide pentachloronitrobenzene (PCNB) used with a complete mineral fertilizer, a nitrogenous fertilizer (in the form of ammonium nitrate) and a urea-formaldehyde fertilizer. It was observed that application of nitrogenous fertilizers prior to planting or during the planting of cotton on plots along with PCNB, inhibited the development of seedlings while it increased the infestation of plants by wilt. A 50% PCNB wetting powder applied in doses of 100-400 kg/ha 10 days prior to cotton planting and supported by higher doses of nitrogenous fertilizers stimulated germination, reduced the injury but failed to lower the over-all infestation of the plant by

1/2

USSR

ZBZESKIY, F. SH., Khimiya v Sel'skom Khozyaystve, no 11, Nov yo, pp 30-34

wilt. The same compound applied at doses of 100 kg/ha in the fall with N₂₀₀P₁₀₀K₃₀ was found to lower the over-all wilt infestation of cotton, increasing the crop of raw cotton by 10.6 metric centners per ha. Commercial-grade PCNB applied at 100 kg/ha in the fall or at 50 kg/ha in both the fall and the spring with higher proportions of mineral fertilizers (N₂₀₀P₁₅₀K₁₂₅) reduced the over-all wilt infestation of cotton and the extent of damage by the disease and promoted an increase in the crop of raw-cotton by 32%.

2/2

- 34 -

ZBARSKY, I. B.

20 Dec 1971

UDC: 617.313.1.015.1:577.155.24
616.316-008.431:577.155.2

Article by I.B. Zharsky, L.F. Adlgarnov, Chief of Medical Biochemistry, Scientific Institute for the Advanced Training of Physicians, Moscow; Moscow, Vsevolod Altschul, Medical Institute, Moscow SSR, Russia, No 11, 1971, pp 3-11]

Salivary nucleases can play a substantial role in protecting the oral cavity from penetration of various infections of the pulmonary and digestive system through the mouth. Determination of the activity of these enzymes in the presence of gastrointestinal pathology could be useful for investigation of its pathogenesis and for diagnostics. However, there is only the published work by Etchell et al. on this subject, which shows that acid and alkaline ribonucleases are present in secretions and mixed saliva. Ribonuclease (EC 3.1.1.1) is classified as No. 2.7.26.1 of salivary glands, deoxyribonuclease (EC 3.1.1.2) of salivary gland secretions and mixed saliva of man have not been investigated.

It has been established that there are changes in activity of enzymes of salivary gland secretions and mixed saliva in the presence of a number of diseases of the digestive system, and this could be used in clinical practice to diagnose and monitor the course of these pathological states (Werman and Solov'ev; G.F. Mityushkevich; Nauck et al.; V.G. Trachenko; Chernik et al.; Myasnikov; Kato et al.; N. Dargatz et al.; Kaufman and Stiller; K.N. Rudnev and V.G. Trachenko, 1971, and others). Considerable data have also been accumulated dealing with the properties of the enzymes of salivary gland secretions and mixed saliva, and with the effect of diverse factors on the level of their activity.

Results of this type can be interpreted only if it is known where a given enzyme is produced, and this was not always taken into consideration in the above-mentioned investigations. For this reason, along with presentation of experimental data, we have tried to report some features characterizing the localization of production of nucleases and other enzymes of saliva.

Nucleases were studied in mixed saliva from 193 people, in the secretions of the parotid gland of 48 people, as well as in experiments on two dogs with isolated salivary gland ducts. A comparative assay of nuclease activity was made on saliva, other biological fluids, and in homogenates of some organs.

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--RESPIRATORY ACTIVITY OF ISOLATED NUCLEAR MEMBRANES AND NUCLEI OF
RAT LIVER -U-
AUTHOR--(05)-KUZMINA, S.N., MONAKHOV, N.K., GAYTSKHOKI, V.S., NEYFAKH,
S.A., ZBARSKIY, I.B.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKADE. NAUK SSSR 1970, 191(1), 215-17
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RESPIRATION, RAT, LIVER, DEHYDROGENASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
COXY REEL/FRAME--3005/1671 STEP NO--UR/0020/70/191/001/0215/0217
RC ACCESSION NO--AT0133576
UNCLASSIFIED

72 021

RC ACCESSION NO--AT0133576

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THE RESPIRATORY ACTIVITY OF ISOLATED NUCLEI OF RAT LIVER CELLS WAS TABULATED WITH AND WITHOUT ADDED CYTOCHROME C, NADH, AND ADP AS WELL AS GLUTAMATE, SUCCINATE, AND CN PRIME NEGATIVE. THE RESULTS SHOWED THAT OXIDATIVE SYSTEMS ARE PRESENT IN THE CELLS OF LIVER STRUCTURE AND SPECIFICALLY IN THE NUCLEI OF THESE CELLS SO THAT NUCLEAR OXIDATION PROCEEDS IN VARIOUS CELLS AND IS NOT LIMITED TO LYMPHOIDAL TISSUES ONLY. THE NUCLEAR MEMBRANE AND NUCLEI PER SE ACTIVELY USE NADH AS THE OXIDN. SUBSTRATE; A LESS INTENSIVE STIMULATION OF RESPIRATION BY NADPH AND A CONSIDERABLE INCREASE OF THIS EFFECT BY ADDED NAD WERE NOTED. THIS INDICATES THAT NADPH IS OXIDIZED MAINLY BY A TRANSHYDROGENASE AND SUBSEQUENT DEHYDROGENATION OF NADH. THE ABSENCE OF A PRONOUNCED EFFECT OF ADDED SUCCINATE ON O₂ SUB₂ UPTAKE AGREED WITH THE LACK OF SUCCINATE DEHYDROGENASE IN THE NUCLEAR STRUCTURES OF THESE CELLS. ADDED ADP DID NOT STIMULATE RESPIRATION. HENCE EXOGENOUS ADP EVIDENTLY DID NOT PLAY A ROLE AS PHOSPHATE ACCEPTOR IN THESE SYSTEMS.

FACILITY: INST. BIOL. RAZV., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AP0054285

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 2 ,
pp 224-231

ON DIFFERENCES BETWEEN THE CONDENSED AND DIFFUSE CHROMATIN
OF NORMAL AND MALIGNANT CELLS

A. . BERMAN, N. P. LEBKOVA, V. A. ARTAMONOVA, and I. B. ZHARSKIY

Advanced Training Institute for Physicians, and Institute of Epidemiology and
Microbiology, Academy of Medical Sciences, USSR, Moscow

Diffuse chromatin of both normal and malignant mouse tissues contains much more polyanions (RNA, non-histone proteins) than the condensed chromatin. For liver it was shown that ³⁵S-methionine was incorporated 20—30 per cent faster into histones and 40—50 per cent faster into non-histone proteins of the diffuse chromatin as compared with the same fractions of the condensed chromatin. Similar results were obtained in the case of hepatoma chromatin fractions. Experiments involving DNA—RNA hybridization revealed that in the liver the DNA of the diffuse chromatin was more active in mRNA synthesis than that of the condensed one. In liver the condensed chromatin contains a part of DNA cistrons that are derepressed in hepatoma.

REEL/FRA
19831423

DI₂

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MONOAMINE OXIDASE ACTIVITY IN LIVER AND ASCITES HEPATOMA NUCLEAR
MEMBRANES --U-
AUTHOR--(03)--GORKIN, V.Z., KUZMINA, S.N., ZBARSKIY, I.B.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 472-3
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RAT, LIVER, OXIDASE, NUCLEUS, TUMOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605006/F01 STEP NO--UR/0020/70/191/002/0472/0473
CIRC ACCESSION NO--AT0139813
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0139813

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECIFIC MONOAMINE OXIDASE ACTIVITY IN RAT LIVER COMPONENTS WAS THE HIGHEST IN NUCLEAR MEMBRANES AND RELATIVELY LOW IN HOMOGENATES AND NUCLEI PROPER; IS ASCITES HEPATOMA IT WAS ALMOST LACKING. IT WAS ALSO SUBSTANTIALLY ABSENT IN HOMOGENATES AND NUCLEI OF OTHER TUMORS SUCH AS MOUSE CARCINOMA AND JENSEN SARCOMA. TWEEN 80 AT CONC. USED FOR ISOLATION OF NUCLEI DID NOT LOWER THE ACTIVITY OF THIS ENZYME IN HOMOGENATES OR NUCLEI IN HEALTHY RATS. FACILITY: INST. BIOL. MED. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 629.78.05-52

BODNER, V. A., ALEKSEYEV, K. B., and ZBARSKIY, I. S.
"Synthesis of the Programmed Extensional Control of a Space
Turning Maneuver"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya
Tekhnika, No 2, 1973, pp 5-11

Abstract: The synthesis of the system of the programmed extensional control is analyzed on the basis of Pontryagin's maximum principle. The differential equations of the rotary motion of a cosmic apparatus, supplemented by boundary conditions, are used in the synthesis. The analyzed problem of the latter consists in the determination of the temporal program of the change of moments applied to the apparatus along bound axes and ensuring the realization of the prescribed turning maneuver within the minimum possible time. Expressions are derived providing a clear presentation of the changing character of the control moments in time and determining the energy input. The extensional and standard control systems are compared. The calculation method is illustrated on an example. Twelve formulas, two bibliographic references.

1/1

USSR

UDC: 629.78.05-52

BODNER, V. A., ALEKSEYEV, K. B., and ZBARSKIY, I. S.

"Theory of the Extensive Control of Orientation"

Kazan' Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1973, pp 5-11

Abstract: The authors study a method for changing the orientation of an aircraft by means of a single turn about a Euler axis. Kinematic relationships are given which are used in selecting the control moments necessary for the rotation of the craft. Differential equations are derived for the craft motion which characterize its dynamic properties during extensive control. It is a second order differential equation with its right side being a known time function.

1/1

- 1 -

1/2 011
UNCLASSIFIED
TITLE--PHOTOCOLORIMETRIC DETERMINATION OF MENTHOL -U- PROCESSING DATE--16OCT70
AUTHOR--(02)-SEMENYCHEVA, A.A., ZBARSKIY, V.B.
COUNTRY OF INFO--USSR
SOURCE--FARMATSIYA (MOSCOW) 1970, 19(1), 46-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CYCLIC ALCOHOL, CHEMICAL ANALYSIS, PHOTOMETRY/(U)FEK56
PHOTOMETER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0674 STEP NO--UR/0466/70/019/001/0046/0049
CIRC ACCESSION NO--AP0117899
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DETN. OF MENTHOL (I) IS BASED ON ITS COLOR REACTION (LAMBDA SUBMAX. 597 NM) WITH VANILIN (II) IN H SUB2 SO SUB4 SOLN. TO DET. I IN PURE PREPNS. DISSOLVE 0.15 G IN 100 ML ETOH, AND DIL. A 5 ML ALIQUOT TO 50 ML WITH ETOH. TO 2 ML OF FRESH PREPD. 1PERCENT II IN H SUB2 SO SUB4, ADD 0.4 ML OF THE SAMPLE SOLN., MIX AND ADD 2 ML WATER. MEASURE THE ABSORBANCE AFTER 15-20 MIN IN A 0.5 CM CUVETTE ON THE PHOTOMETER FEK 56 (FILTER NO. 8) AGAINST A BLANK SOLN. CALC. THE RESULTS BY USING E PRIME 1 PERCENT SUBICM, EQUALS 555.3, ESTD. ON THE ABOVE PHOTOMETER. BEERS LAW HOLDS FOR 0.06-0.23 MG I-ML. THE COLOR IS STABLE FOR 1.5-2 HR. FACILITY: TSENT. APTECH. NAUCH.-ISSLED. INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTIVITY OF AN ACTIVATED METHYL GROUP IN NITRO COMPOUNDS. II.
AROMATIC NITRO COMPOUNDS IN THE VILSMEIER HAACK REACTION -U-
AUTHOR-(03)-ZBARSKIY, V.L., BORISENKO, A.A., ORLOVA, YE.YU.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 520-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AROMATIC NITRO COMPOUND, XYLENE, PERCHLORATE, ORGANIC AZO
COMPOUND, ACROLEIN, TOLUENE, BENZENE DERIVATIVE, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1685

STEP NO--UR/0366/70/006/003/0520/0525

CIRC ACCESSION NO--AP0112679

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112679

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VILSMEIER HAACK REACTION OF 2,4,6,TRINITROXYLENE WITH HCONME SUB2 GAVE 1,3,BIS(2,(DIMETHYLAMINO),1,FORMYL VINYL),2,4,6,TRINITROBENZENE. THE REACTION OF 2,4,6,TRINITROCREOSOL WITH HCONME SUB2 IN THE PRESENCE OF POCL SUB3 FOLLOWED BY THE TREATMENT WITH HCL0 SUB4 GAVE A MIXT. OF 4,(2,4,6,TRINITRO,3,CHLOROPHENYL),2,6,DIMETHYL,2,AZA,6,AZONIA,3,5,HEPTADIENE PERCHLORATE AND 4,(2,3,DICHLORO,4,6,DINITROPHENYL),2,6,DIMETHYL,2,AZA,6,AZONIA,3,5,HEPTADIENE PERCHLORATE. IN THE CASE OF 2,6,DINITRO,P,TOLUIC ACID (1) THE ONLY ISOLATED PRODUCT WAS 2,(2,6,DINITRO,4,CARBOXYPHENYL),3,DIMETHYL,AMINOACROLEIN. THE ATTEMPTS TO SUBJECT 2,4,DINITROTOLUENE, 4,CHLORO,2,4,DINITROTOLUENE, 2,CHLORO,4,6,DINITROTOLUENE, 1 ET ESTER, OR 2,4,6,TRINITROETHYLBENZENE TO VILSMEIER HAACK REACTION WERE NOT SUCCESSFUL. FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 681.326

ZBANYSEVSKIY, V. M., MARCHUK, A. A., NESTERENKO, B. B., and PANCHISHIN, V. I.
Institute of Mathematics, Academy of Sciences Ukrainian SSR

"Device for Controlling the Structure of a Computer Medium"

USSR Authors' Certificate No 312273, Cl. G 06 g 7/46, filed 7 Apr 70,
published 7 Oct 71 (From RZh-Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 5, May 72, Abstract No 5B221P)

Translation: The invention has to do with computer devices used to control the structure of an optron analog network in the solution of partial differential equations. Special-purpose devices for solving partial differential equations by the modeling method are well known: for example, the "USM-1" and the "Vega," which use a network of resistors as the analog medium. However, the USM-1 network model does not permit control of the network structure at sufficient speed: i.e., changing of the resistances of the resistors according to the necessary law. The automated Vega network model permits the resistances of the resistors constituting the networks to be changed automatically according to a given program as an equation is solved. This is done by connecting to the network a resonator of the requisite rating from an available set by means of an electromagnetic relay. Such a principle of controlling the structure of

1/2

USSR

ZBARYSHEVSKIY, V. M., et al., USSR Authors' Certificate No 312273

the medium makes the entire device cumbersome and requires the presence of a large number of precision resistors with various ratings. The purpose of the invention is to develop a device for electronically setting and controlling the structure of a computer medium (analog network) that is based on optrons. The proposed device makes it possible to set the resistance values of the photoresistors of the optrons automatically according to a given program and to change them according to the requisite law during the solution of an equation by changing the filament current of the optron light sources according to the corresponding law.

2/2

- 4 -

USSR

UDC 576.858.098.396.332.083.1

67

YERSHOV, F. I., GAYSKHOKI, V. S., KISELEV, O. I., ZAYTSEVA, O. V., MENSHIKH, L. K., URYVAYEV, L. V., MEYFAKH, S. A., and ZEDANOV, V. M., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow, Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad

"Replication of Infectious Viral RNA in Isolated Mitochondria. Report II: Replication of Viral RNA in Mitochondria and Characteristics of the Final Product"

Moscow, Voprosy Virusologii, No 3, May/Jun 71, pp 274-280

Abstract: It was of interest to establish whether isolated mitochondria could replicate virus RNA, that is whether "bacterial" ribosomes could synthesize the functionally active RNA polymerase, and whether the final product of virus-specific synthesis has infectious properties. H^3 -RNA isolated from purified Venezuelan equine encephalitis virus was used to study the function of virus RNA emerging in mitochondria. Contact between mitochondria and RNA was 30 minutes at 0°C . After this, the mitochondria were incubated under aerobic conditions for 2 hours at 37°C . After termination of the incubation period, RNA was separated by the phenol deproteinizing method and analyzed in a sucrose density gradient (5-30%). Peaks were found in the 40S and 26-20S region. The 40S area corresponds to RNA-ase and the 26-20S area to ribonu-
1/2

USSR"

YERSHOV, F. I., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 274-280
cleave-resistant material, the replicative form of viral RNA. The data obtained
indicate that the predominant portion of viral RNA appearing in mitochondria
does not participate in the replication process and its dehydration products
show up in the top zone of the gradient. No radioactive products of mito-
chondrial RNA translation were detected, which can be explained by the effective
concentration of actinomycin D. As the newly synthesized RNA forms complexes
with proteins, infectious activity increases. The complexes formed have
subcellular structures and are separated from infected cells.

2/2

- 20 -

USSR

UDC: 621.396.66

ZBOROVSKIY, A. A., SKOMOROVSKIY, Yu. A., Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Interference Immunity of Optical Communications Lines With Radio and Optical AGC Systems"

Moscow, Radiotekhnika, Vol 27, No 8, Aug 72, pp 7-12

Abstract: The authors analyze the interference immunity of optical communications lines with different automatic gain control systems designed to eliminate multiplicative interference.

1/1

USSR

UDC 621.373.826

ZBOROVSKIY, A. A., SKOMOROVSKIY, YU. A.

"Nonlinear Distortions when Filtering the Radiation of Semiconductor Lasers by Optical Filters"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrocommunications Engineering--collection of works), vyp. 9, Moscow, Svyaz', 1972, pp 9-12 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5D205)

Translation: A study was made of the nonlinear distortions occurring on filtering the radiation of a semiconductor laser by means of optical interference filters. The magnitude of the nonlinear distortions is determined as a function of the filter parameters and also the characteristics of the semiconductor laser and the signals modulating the radiation. There are 2 illustrations and a 3-entry bibliography.

1/1

.. 47 ..

USSR

UDC 621.373.826

ZBOROVSKIY, A. A., SKOMOROVSKIY, YU. A.

"Reception of Binary Optical Signals of Semiconductor Lasers under Turbulent Atmospheric Conditions"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrocommunications Engineering--collection of works), vyp. 9, Moscow, Svyaz', 1972, pp 4-8 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5D198)

Translation: A study is made of the noiseproofness of the reception of optical binary signals in OLS with semiconductor lasers under turbulent atmospheric conditions with automatic regulation of the threshold level. The total error probability at the exit from the threshold device is defined as a function of the parameters of the fluctuating medium and the background level. Results are presented from an experimental study of the noiseproofness of the reception of the optical binary signals in the OLS with a semiconductor laser for two reception schemes: with a constant and with a follow threshold. There are 2 illustrations and a 4-entry bibliography.

1/1

USSR

UDC 669.046.5

RABINOVICH, Ye. I., VORONIN, A. Ye., and ZBOROVSKIY, A. A.

"Effect of Convective Mixing of the Melt on Oxide Impurities Distribution Along the Height of a Killed Steel Ingot"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 54-57

Translation of Abstract: Results are presented of a mathematical analysis of the formation of nonmetallic impurities and their subsequent refining in steel in solidification in a mold. The nature of molten steel convective mixing during solidification and the distribution of oxides along the height of the killed steel ingot are described. 2 figures, 8 references.

1/1

Analysis and Testing

USSR

UDC 669.14-41:620.185.5

VOSTRIKOV, A. A., GUBCHEVSKIY, V. P., ZBOROVSKIY, A. A., NEMKINA, E. D.,
RADAYEV, G. D.

"Ultrasonic Method of Studying Recrystallization of Sheet Steel"

Zavodskaya Laboratoriya, No 3, 1971, pp 302-304.

ABSTRACT: Specimens of Type 08 kp steel 1 mm thick, annealed at 50°C intervals in the 100-1,200°C range, were used to study the dependence of attenuation of ultrasound (inclination of piezoelement 40°, frequency 2.5 MHz) on angle of beam deflection in relationship to the rolling direction. Parallel x-ray structural studies of the process of recrystallization of these specimens confirmed the possibility of determining the temperatures of beginning and ending of recrystallization on the basis of approximate attenuation curves of ultrasound, and also of studying the kinetics of the process of recrystallization of sheets of this steel. 3 Figures; 1 Table; 2 Biblio. Refs.

1/1

USSR

UDC 620.793

ZBOZHNYA, O. M., and SHATINSKIY, V. F., Physicomechanical Institute,
Academy of Sciences Ukrainian SSR, L'vov

"Producing Diffusion Coatings With the Aid of Isothermal Mass Transfer in
Molten Metals"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 4, 1973, pp 43-48

Abstract: This work was conducted to establish the possibility of producing diffusion coatings by means of isothermal mass transfer in molten metals and to investigate the processes which control impregnation by the same method. Samples of armco iron were subjected to impregnation in melts of Ca, Li, Na, Bi, Pd and Cd containing 5 wt% diffusing elements of Be, B, Al, V, Cr, Ga, Ge, Ni, Nb, Mo, W, and Pt. The impregnation process was carried out at 1000°C for 100 hours. On the basis of test results it was possible to conclude that the use of an intermediate makes it possible to produce a wide series of coatings. Also, isothermal transfer, production of coatings, and impregnation kinetics are determined by the difference in the chemical potentials of the impregnated and impregnating components between the phases and their adsorption activity at the interphase boundary. Phase composition and structure of a coating can be controlled by means of transport melt and impregnation mode selection. A
1/2

USSR

ZBOZHNYA, O. M. and SHATINSKIY, V. F., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 4, 1973, pp 43-48

matrix is given which shows the combinations of melt and diffusion element and in which cases coatings are formed, corrosion damage occurs, inclusions in the grain boundaries occur, diffusion prevalence in the grain boundaries exists, etc. 2 figures, 1 table, 13 bibliographic references.

2/2

Coatings

USSR

UDC 620.191:621.793:669.017

SHATINSKIY, V. F., ZBOZHNAYA, O. M., Institute of Physico Mechanics, Academy of Sciences UkrSSR, L'vov

"Saturation of lKh18N9T Steel with Beryllium and Corrosion Resistance of Coatings in a Lithium Melt"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 5, 1972, pp 59-62.

Abstract: In order to increase the heat resistance and oxidation resistance of steel products, their surfaces are sometimes saturated with beryllium. This work is dedicated to the study of the possibility of producing beryllium coatings on lKh18N9T steel in a liquid metal bath using an intermediate transport melt of Ca, and also the study of the kinetics and establishment of optimal modes of saturation by this method; the corrosion resistance of beryllium coatings in a lithium melt was also determined. The method was found to produce good coatings, protecting lKh18N9T steel from corrosion in lithium; however, the structure of the coatings was unstable, resulting in variations in properties (microhardness, surface smoothness) and "re-absorption" with time.

1/1

UDC 519.2:62-19

USSR

VAGNER, I. V., ZARENIN, YU. G., ZBYRKO, M. D.

"Accident-Free Operation of an Aggregate With a Double Safety System"

V sb. Teoriya tochn. i nadezhn. kibernet. sistem. Tr. Seminara. Vyp. 2 (Theory of Precision and Reliable Cybernetic Systems. Works of the Seminar. No. 2 -- Collection of Works), Kiev, 1969, pp 114-127 (from RZh-Matematika, No 10, Oct 70, Abstract No 10V181)

Translation: The operation of aggregates having double safety systems is considered. It is proposed that preventive maintenance be planned individually for each of the units. Formulas are derived for the probability of accident-free operation of the aggregate for different periodicities of the preventive checks of the safety units under the assumption of exponential distributions for the time of failure-free operation of the aggregate and safety units. Further, for given probabilities of accident-free and failure-free operation of the aggregate and failure-free operation of the safety units the authors solve the problem of determining the optimum periodicity of preventive checks of the safety units. The optimization criterion is the minimum expenditure of conducting the preventive checks. Ye. Barzilovich.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ISOTOPIC HYDROGEN EXCHANGE OF ARENECHROMIUM TRICARBONYLS IN AN ACID
MEDIUM -U-
AUTHOR--(05)--KURSANDV, D.N., SETKINA, V.N., BARANETSKAYA, N.K., ZDANOVICH,
V.I., ANISIMOV, K.N.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1103-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ISOTOPE EXCHANGE, CHROMIUM COMPOUND, CARBONYL COMPOUND,
BENZENE, ORGANOCHROMIUM COMPOUND, ORGANIC PHOSPHORUS COMPOUND, DEUTERIUM
COMPOUND, CHEMICAL REACTION RATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/0497 STEP NO--UR/0020/70/190/005/1103/1105
CIRC ACCESSION NO--ATJ113388
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0113388

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RATE CONSTS. OF THE ISOTOPIC HYDROGEN EXCHANGE OF ARENECHROMIUM CARBONYLS IN ACID MEDIA ARE INVESTIGATED. THE EXCHANGES OF C SUB6 H SUB6, C SUB6 H SUB6 CR(CO) SUB3, ME SUB3 C SUB6 H SUB3 CR(CO) SUB3, C SUB6 H SUB6 CR(CO) SUB2 PPH SUB3, ME SUB3 C SUB6 H SUB3 CR(CO) SUB2 PPH SUB3, AND MEOC SUB6 H SUB5 CR(CO) SUB2 PPH SUB3 IN CF SUB3 CO SUB2 D ARE STUDIED. THE RATE CONSTS. OF ALL COMPS. ARE FOUND TO BE ON THE ORDER OF 10 PRIME NEGATIVE 6 TO 10 PRIME NEGATIVE 7 WITH THE EXCEPTION OF C SUB6 H SUB6 WHICH IS 10 PRIME 7 TIMES FASTER. FACILITY: INST. ELEMENTORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ACETYLENIC COMPOUNDS IN AN IONIC HYDROGENATION REACTION -U-
AUTHOR--(03)-ZDANOVICH, V.I., KUDRYAVTSEV, R.V., KURSANDV, D.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 472-3
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACETYLENE, HYDROGENATION, ORGANSILICON COMPOUND, BENZENE
DERIVATIVE, METHYLENE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0850 STEP NO--UR/0062/70/000/002/0472/0473
CIRC ACCESSION NO--AP0119754
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119754

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION OF A SUBSTITUTED ACETYLENES WITH ET SUB3 SIH-CF SUB3 CD SUB2 H OVER 3-4 DAYS AT ROOM TEMP. GAVE THE FOLLOWING PERCENT YIELDS OF PRODUCTS OF COMPLETE HYDROGENATION OF THE TRIPLE BOND: PHC: CH30; P-MEC SUB6 H SUB4 C: CH 21; P-MEOC SUB6 H SUB4 C: CH 20; PHC: CPH 3; PHC: CME 7; BUC: CH 0; ETC: CET 0; AND ISO PRC: CH 5PERCENT. THUS THE REACTION FUNCTIONS ONLY FOR ACETYLENES WITH A FREE CH TERMINATION, WITH A TRIPLE BOND ACTIVATED BY AN AUTOMATIC RING. FACILITY: INST. LEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 519.24

ZDANOVICH, V. V.

"The Use of Shepard Corrections to Consider the Influence of Level Quantization on the Accuracy and Representation of the Signal with a Random Component"

Elementy Tsifr. Sistem Upr. [Elements of Digital Control Systems -- Collection of Works], Leningrad, Nauka Press, 1971, pp 50-58, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V383 by the author).

Translation: Level discretization of a random process is studied and an estimate of the discretization errors is produced. It is demonstrated under which conditions the noise introduced by discretization can be considered noncorrelated with the initial process and the autocorrelation dependences within quantization noise can be ignored.

1/1

- 10 -

USSR

UDC 541.123.71

ZDANOVSKIY, A. B., and TIMOSHENKO, YU. M., Kazan' State University

"Polythermal Evaporation of Sea Water Concentrate at Boiling Temperatures"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 1, Jan 72, pp 259-261

Abstract: Evaporation of concentrated sea type brine obtained after separation of bromine and most of NaCl was studied in basin type evaporation. The starting materials was prepared from chemically pure reagents, and it had the following composition: $MgSO_4$ - 7.58%, $MgCl_2$ - 10.45%, KCl - 2.23%, NaCl - 9.99%.

Evaporation was carried out in a three neck flask equipped with a mechanical stirrer and a thermometer, its rate being about 150 g of water from 1 kg of solution per hour. The starting solution begins to boil around $108^{\circ}C$, the first crystals appearing at $112^{\circ}C$. In the interval $112-114.4^{\circ}C$ the only product precipitating is the halite, above $114.4^{\circ}C$ a concurrent precipitation of halite, langbeinite ($K_2SO_4 \cdot 2MgSO_4$) and kieserite ($MgSO_4 \cdot H_2O$). The entire evaporation process is metastable. The quantities of precipitating salts were calculated by the method of material balance. Plotting these values against the boiling temperature showed that precipitation of all of the salts increases rapidly in the early stages, eventually reaching a plateau.

1/1

- END -

CSO: 1841-W

USSR

UDC: 621.397.62

ZDANYS, Y., MASIULIS, F., BARTKEVIČIUS, S.

"Stabilized Power Supply for the YHT-59 Television Set"

V sb. Elektrotehnika (Electrical Engineering--collection of works), Kaunas, 1970, pp 181-182 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G179)

Translation: The article is devoted to calculating the basic parameters of a ferroresonance voltage stabilizer under the condition that the load power is constant. Theoretical and experimental data are given for a stabilizer built in accordance with the given recommendations.. Resumé.

1/1

- 119 -

ZDASYUK, I.A.

Electronic Engineering

SciJPRS 5840
15 Feb 73

Electronic
Engineering
RESEA-1 ELECTRONIC REGENERATIVE REPEATER

[Article by I. A. Shilov and I. A. Zdashuk, Moscow, Vestnik Svyazi, Russian, No 11, November 1972, pp 22-24]

The 24th Party Congress set the task of raising the technical level and improving the quality of all types of products. Scientific organizations are to improve the communications equipment and enhance its reliability on a planned basis. RESEA-1 electronic regenerative repeater was developed at KONTIS (Main Branch of the Central Scientific Research Institute of Communications) to improve the performance quality and reliability of the telegraphs. It is designed for use in the form of an attachment for the teleprinters of any type and any version: STA-2MF, STA-M67, KTA-60, T-63 and other teleprinters. Trial operation of the RESEA-1 showed that with its use the distortion of the telegraph signals during the transmission declined to 4-5 percent, the reliability of communication considerably increased and the time for the adjustment and testing both of the telegraphs and of the links as a whole sharply decreased. RESEA-1 has been series-produced since 1971.

Quality and Reliability

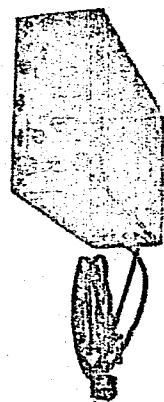


Figure 1

57408
6-73

2-16. STRUCTURE OF THE POLYCRYSTALLINE SILICON FILMS SYNTHESIZED IN A LOW-PRESSURE REACTOR

[Article by F. L. Zdel'man, V. V. Vokobuhov, V. Z. Lajda, Novosibirsk: Novosibirsk, III Sibirijskij PO Proektirovanija i Strojki Poluprovodnikov i Reaktivnoj i Pioner, Novosibirsk, 12-17 June, 1972, p. 67]

The growth processes in the structural characteristics of the polycrystalline silicon films obtained by pyrolysis of monosilane in a reduced pressure reactor are described. The polycrystalline silicon films were applied to the surface of an amorphous layer of silicon nitride up to 1000 Å thick synthesized in the same cycle on (111) and (100) silicon. Two regimes are analyzed for obtaining the polycrystalline silicon: high (I) and low (II) intensity of the molecular beam.

It is demonstrated that in mode I, two stages of the formation of the structure are possible: the initial, rapid growth (primarily to 900°C) and recrystallization proceeding in individual cases, with the formation of textures. The film-temperature functions of the number of sinter and the grain growth rates are presented. The recrystallization activation energy is defined on the order of 1.2-1.7 eV/at. The pyrolysis temperatures of 100-1100°C and times of 15-120 seconds were used.

Analogous functions were studied for mode II at temperatures of 700-1100°C and with a pyrolysis time of 5-120 seconds. The structure of the films retained the initial texture, beginning with 900°C, the texture is noted (with large exposure), and at 1100°C, textures are observed after 10 seconds from the beginning of pyrolysis. There is a relation between the orientation of the silicon-substrate and the texture.

B. A. Joyce, et al., Philos. Mag., No 16, 289, 301, 1966; No 15, 1167, 1967; No 17, 1163, 1968; No 19, 403, 1969.

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ON DESIGN AND CONTROL OF AUTOMATIC UNITS FOR EXPLORATION OF PLANET
SURFACE -U-
AUTHOR--(04)-KATYS, G.P., IIINSKIY, V.M., MELNICHENKO, I.K., ZDOR, S.E.
COUNTRY OF INFO--USSR, FRANCE
SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON
AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 27 P.
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MECH., IND., CIVIL AND
MARINE ENGR, ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--PLANETARY SURFACE, AUTOMATIC CONTROL EQUIPMENT, LUNAR SURFACE,
VEHICLE, PROGRAMMED AUTOMATIC CONTROL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0008 STEP NO--UR/0000/70/000/000/0000/0000
CIRC ACCESSION NO--AT0117308
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16DCT70

CIRC ACCESSION NO--AT0117308

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE BASIC CHARACTERISTICS OF UNMANNED VEHICLES WHOSE CONTROL SYSTEMS USE SELF ADJUSTING AND LOGIC CIRCUITS. THE PARAMETER DISTRIBUTION ANALYSIS PROBLEMS WHICH CAN BE SOLVED BY THE VEHICLES ARE DISCUSSED. THE LOCOMOTION TECHNIQUES OF THE VEHICLES ARE EXAMINED. THE PROGRAMMING OF THE MOTION IS CONSIDERED TAKING INTO ACCOUNT THE SCANNING AND ANALYZING CHARACTERISTICS OF THE CRAFT.

UNCLASSIFIED

USSR

UDC 681.3:51

KATYS, G. P., ZDOR, S. YE., and SHIROKOV, V. B.

"Optimal Structures of Optoelectronic Retrieval and Recognition Systems"

Moscow, Tsifrovaya Vychislitel'naya Tekhnika i Programirovaniye, No 7, 1972,
pp 172-181

Abstract: The article considers the question of the optimal synthesis of optoelectronic retrieval and recognition systems from the standpoint of the construction of rational structures optimized according to certain information criteria. Information on radiation fields can be obtained by parallel and serial methods. Both methods can be combined into one, in which the field scanning over many parallel channels is accompanied by the simultaneous scanning by these channels, thus permitting a significant expansion of retrieval system capabilities. If there is a priori information, a possible approach to optimization of radiation field scanning involves the compilation of some optimal program. The lack of such data on the field being scanned makes it necessary to introduce self-tuning or learning, consisting in the use of the intermediate scan results to correct the search or recognition procedure. The article discusses questions in the development of scanning programs and self-tuning algorithms in retrieval and recognition systems.

1/1

1/2 CC9
UNCLASSIFIED
TITLE--ION EXCHANGE TECHNOLOGY IN THE HYDROMETALLURGY OF GOLD -U-
PROCESSING DATE--11DEC70
AUTHOR--(05)--FRIDMAN, I.D., POCHKINA, L.E., ZDOROVA, E.P., BEK, R.YU.,
HASLIY, A.I.
COUNTRY OF INFO--USSR
SOURCE--TSVET. METAL. 1970, 43(3), 70-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--HYDROMETALLURGY, GOLD, ION EXCHANGER, EXTRACTIVE
METALLURGY/(U)APZ ANION EXCHANGER
CENTRAL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/1407
STEP NO--UR/0136/70/043/003/0070/0074
CIRC ACCESSION NO--AP0126945
UNCLASSIFIED

2/2 CC9

UNCLASSIFIED

PROCESSING DATE--110EC70

CIRC ACCESSION NO--AP0126945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TECHNOL. SCHEMATIC DIAGRAM FOR THE FILTERLESS SURPTION PROCESS IN THE EXTN. OF AU FROM CYANOGEN PULPS BY USE OF ANION EXCHANGER AP 2 IS GIVEN. AP 2, BASED ON CHLOROMETHYLATED COPOLYMER STYRENE DIVINYLBENZENE AND TERTIARY AMINE, WAS SYNTHESIZED UNDER LAB. CONDITIONS. THE INCREASE IN SELECTIVITY OF AP 2 FOR GOLD IS 2-2.5 TIMES AND ITS CAPACITY IS 1.3-1.5 TIMES THAT OF OTHER ANION EXCHANGERS UNDER ANALOGOUS CONDITIONS.

UNCLASSIFIED

USSR

2

UDC 622.342:541.183.12

FRIDMAN, I. D., POCHKINA, L. YE., ZDOROVA, E. P., BEK, R. YU., MASLIY, A. I.,
PUNISHKO, O. A., POCHIVALOV, I. N., and STAFEEVA, L. S.

"Ion-Exchange Technology in Gold Hydrometallurgy"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 70-74

Abstract: Ion-exchange technology permits the use of filter-free systems, thus eliminating both costly equipment and cumbersome operations -- filtration of pulp and washing of precipitates as well as precipitation of Au from solutions. Sorption leaching, which is more complete in dissolving Au from ore and reduces the loss of dissolved gold in the dump pulp, offers much better conditions for higher Au extraction. In order to provide satisfactory results, the new technology requires the use of anionites, which are selective with respect to Au, and also have high kinetic, mechanical, and regeneration properties. The selectiveness of the AP-2 anionite, synthesized at the Kemerov Scientific-Research Institute for the Chemical Industry, was found to be 2--2.5 and its capacity -- 1.3--1.5 times that of similar anionites. The anionite was tested on a semi-industrial unit using a counter-current system. The high desorption capacity of the bifunctional AP-2 anionite with respect to metal impurities makes it possible to simplify the regeneration process and reduce the number of required elements. The process

1/2

USSR

FRIDMAN, I. D., et al, Tsvetnyye Metally, No 3, Mar 70, pp 70-74

includes the following phases: desorption of CN, Zn, and Ni with HNO_3 or H_2SO_4 solutions; desorption of Au, Ag, and Cu by chloride and sulfide solutions of thio-urea during electroelution, and desorption of Fe by NH_4NO_3 alkaline solutions at $50\text{--}55^\circ\text{C}$. The high desorption capacity of the AP-2 anionite determines the relatively short duration of the regeneration process: desorption of CN, Zn, and Ni -- 5 hrs; desorption of Au, Ag, Cu during electroelution -- 3--5 hrs; desorption of Fe--5 hrs. The complete procedural flow chart is given in the original article.

2/2

- 26 -

USSR

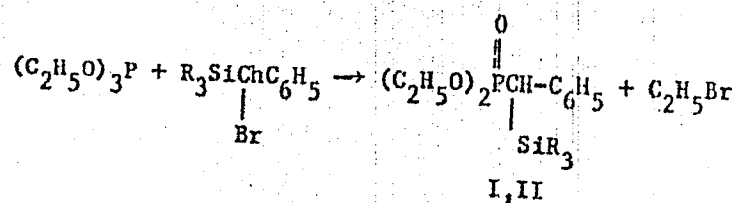
UDC 547.341

NOVIKOVA, Z. S., ZDOROVA, S. N., LUTSENKO, I. F.

"Esters of Silicon-Substituted Benzylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 112-117

Abstract: In order to synthesize the silyl-substituted benzylphosphonates, Arbuzov and Mikhaelis-Bekker reactions were performed with α -halogenbenzylsilanes. Direct silylation of trialkylhalogensilane diethylbenzylphosphonate was also carried out. As a result of the reactions, diethyl- α -trimethylsilylbenzylphosphonate (I) and diethyl- α -triethylbenzylphosphonate (II) were obtained:



By silylation of diethylbenzylphosphonate of trialkylchloromethylsilanes, β -silicon-substituted phosphonates were synthesized. The mobility of the trialkylsilyl radical in these compounds under the effect of nucleophilic reagents was investigated. A study of the properties of the synthesized compounds

1/2

- 33 -

USSR

NOVIKOVA, Z. S., et al., Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 112-117

demonstrated that the α -silicon-substituted benzylphosphonates are easily subjected to alcoholysis.

2/2

USSR

UDC: 681.3

KASATKIN, V. N., PEREKHOD, I. A., LITVINENKO, V. M., KHRISTIN, I. V.,
ZDOROVITSEV, A. A.

"Algorithmic Station System, and the Teaching of Programming in Secondary
Schools"

V sb. Primeneniye tsifr. vychisl. mashin dlya obuch. programmir. (Use of
Digital Computers for the Teaching of Programming--collection of works),
Kiev, 1970, pp 25-30 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
7V779)

[No abstract]

1/1

UNCLASSIFIED
TITLE--X RAY INVESTIGATION OF MOLYBDENUM AND NICKEL IRRADIATED WITH HELIUM
ICN -U-
AUTHOR--BIKOV, V.M., ZORVITSEVA, G.G., TROYAN, V.A., KHAYMOVICH, V.S.
COUNTRY OF INFO--USSR
SOURCE--UKRAINSKII FIZICHNII ZHURNAL, VOL 15, JAN. 1970, P 135-138
DATE PUBLISHED-----7C
SUBJECT AREAS--PHYSICS
TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, MOLYBDENUM, NICKEL, ION
BOMBARDMENT, CRYSTAL LATTICE DEFORMATION, ALLOY ANNEALING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1978/2005
STEP NO--UR/0185/70/015/000/0135/0138
GIRC ACCESSION NO--AP0046689
UNCLASSIFIED

34
39

Acc. Nr:

AP00046689

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:
UR0185

A70-23197 # X-ray investigation of molybdenum and nickel
irradiated with helium ions (Rentgenografichne doslidzhennia
molibdenu ta nikeliu, oprómineniikh ionami geliu). V. M. Bikov, G.
G. Zdorovtseva, V. A. Troian, and V. S. Khaimovich (Moskovskii
Inzhenerno-Fizicheskii Institut, Obninsk, USSR). *Ukrainskii
Fizichnii Zhurnal*, vol. 15, Jan. 1970, p. 135-138. 5 refs. In
Ukrainian.

Investigation of the changes in polycrystalline Mo and Ni
specimens caused by He ion bombardment with an energy of 60 keV
(irradiation dose of 10 to the 15th to 10 to the 20th particles). The
D-pattern of the irradiated specimens proved to be essentially
different from that for reference specimens, some lines being split.
These changes depend upon the integral irradiation dose. It appears
to result from the tetragonal distortion of the lattice form. The
changes decrease in annealing and disappear completely at a
temperature of about 400 C.

(Author)

945

REEL/FRA
19782005

18

USSR

UDC 612.017.1

ZDRODOVSKIY, P. F., GURVICH, G. A.

Fiziologicheskiye osnovy immunogeneza i yego regulyatsiya (Physiological Principles of Immunogenesis and Its Regulation), Moscow, Meditsina, 1972, 88 pp

Abstract

The book presents the most important data of world literature and in particular the findings of many years of research by the authors on the problem of immunogenesis and its regulation as reflected in the formation of protective antibodies. The authors view the protective-immunological processes as a complex of biological reactions in the whole organism that are dependent on general physiological patterns. In particular these patterns are unquestionably associated with specific changes (increases) in the reactivity of immune cells of lymphatic tissue. In turn the aforementioned predetermines the disclosure of the patterns of increased and decreased immunological activity of an organism in the production of antibodies, a point which is exhaustively examined in the book together with the effect of applying these patterns in the production of horse serum. Also presented is an experimental substantiation of the neuro-humoral regulation of immunogenesis as reflected in the formation of antibodies. The book also presents new data concerning the unquestionable dependence of immunogenesis on the hypothalamus.

In very condensed form the present work presents and experimentally substantiates the physiological principles of immunogenesis including the

1/6

USSR

ZDRODOVSKIY, P. F., GURVICH, G. A., Meditsina, 1972, 88 pp

neuro-hormonal regulation of immunogenesis. Key points of this concept that have been presented in journal articles and monographs are summarized beginning with the year 1937.

The idea of the necessary integration of immunological patterns with general physiological patterns was first formulated back in 1937 in an article entitled "The Time Factor in the Dynamics of Immunity and the Significance of Intervals Between Vaccinations" [P. F. Zdrodovskiy, Arkh. biol. nauk, Leningrad, Vol 68, 1937]. In this article, after analyzing the periodic change of increase and decrease in immunological reactivity of an organism following repeated antigen stimulation (a series of experiments conducted on guinea pigs by M. Roshkovskaya) -- a phenomenon ascertained by a laboratory of the AUIEM [All Union Institute of Experimental Medicine], we noted that these observations "while building a bridge between the patterns of immunology and general physiology" simultaneously indicate that "it will hardly be possible to discover patterns controlling immunogenetic phenomena in isolation from physiology" (p. 124).

Ultimately, on the basis of numerous immunological studies conducted under the direction of P. F. Zdrodovskiy associates of the epidemiological sector of the AUIEM (1934-1938) and later associates of the division of

2/6

- 112 -

USSR

ZDRODOVSKIY, P. F., GURVICH, G. A., Meditsina, 1972, 88 pp

experimental pathology and immunology of infection of the Institute of Experimental Medicine of the USSR Academy of Medical Sciences (1945-1948) formulated the fundamental proposition that notwithstanding their own unique features, immunogenesis and antibody formation in the whole organism are subordinate to general physiological stimulation-inhibition and summational patterns discovered for the nervous system by I. M. Sechenov, N. Ye. Vvedenskiy and I. P. Pavlov and simultaneously recognized as having general biological significance (N. Ye. Vvedenskiy, 1901; I. P. Razenkov, et al., (1934-1937)

In addition to Selye's teaching on stress and the neuro-hormonal regulation of protective and adaptive processes, in 1956 we formulated the second basic proposition which was as follows: "Evidently the regulation of antibody production like the regulation of protective reactions in general are performed in the organism by the hypothalamo-hypophyso-adrenocortical system which plays a universal homeostatic role vis-a-vis Claude Bernard's 'internal medium'" [P. F. Zdrodovskiy, "The Current State of Theoretical Immunology and Its Immediate Tasks," Vestnik AMN SSSR, 1956, 3, 48; P. F. Zdrodovskiy, "Problems of Infectious Pathology and Immunogenesis," Vestnik AMN SSSR, 1958, 1, 24; P. F. Zdrodovskiy, "Concerning the Adaptive and Protective Mechanisms

3/6

USSR

ZDRODOVSKIY, P. F., GURVICH, G. A., Meditsina, 1972, 88 pp

of the Organism," Vestnik AMN SSSR, 1960, 2, 13], which was subsequently confirmed (1960) in experiments on rats by G. A. Gurbich [P. F. Zdrodovskiy, "Cellular Bases and Neuro-Hormonal Regulation of Immunogenesis. Paper Presented at a Conference of the Institute of Experimental Medicine of the Academy of Medical Sciences in May 1960. ZhMEI, 1961, 1, 3]

Based on the aforementioned experiments of G. A. Gurbich (1960), as a "working hypothesis" the neuro-hormonal regulation of immunogenesis has acquired the validity of the theory of neuro-hormonal regulation of immunogenesis within the framework of the universal significance of the hypothalamo-hypophyso-adrenocortical system of homeostasis [P. F. Zdrodovskiy, "On the Physiological Aspects of Immunogenesis and Its Regulation," Vestnik AMN SSSR, 1972, 12] in the most recent studies by G. A. Gurbich and Ye. A. Kabanova (1971/1972).

Thus the concepts of the physiology and regulation of immunogenesis that developed over a space of 35 years are concisely presented in the present book.

Contents	Page
Introduction. On the physiological aspects of immunogenesis	5
Significance of lymphoid tissue cells in formation of antibodies	9
On the immunological significance of the thymus	12
On the fate of the antigen in the organism	13

4/6

- 113 -

USSR

ZDRODOVSKIY, P. F., GURVICH, G. A., Meditsina, 1972, 88 pp

On antigen information	14
Basic patterns of immunogenesis as reflected in antibody formation	17
Patterns of heightened immunological reactivity	19
Remote revaccination	20
Effectiveness and universality of the effect of revaccination	21
Dynamics of formation of antibodies after initial immunization and revaccination	26
Resume	28
Problem of superficial antigens	30
Conditions and patterns of inhibition of immunological activity	32
On the use of physiological patterns of immunogenesis in production	
Cytokinetics of immunogenesis in the light of immunological patterns	46
Theory of antibody formation	52
Preliminary remarks concerning antibodies.....	52
Ehrlich's side-chain theory	55
Jerns's natural selection theory	56
Burnet's clonal selection theory	56
Haurowitz-Pauling "direct matrix" theory	58
Burnet-Fenner "indirect matrix" theory	58
5/6 Matrix-genetic theory	59

USSR

ZDRODOVSKIY, P. F., GURVICH, G. A., Meditsina, 1972, 88 pp

Neuro-humoral regulation of immunogenesis	64
On physiological stereotypes of the organism's protective mechanisms	78
Bibliography	83

6/6

- 114 -

USSR

UDC 576.851.71+616.981.71

ZDRODOVSKIY, P. F. and GOLINEVICH, Ye. M.

Ucheniye o Rikettsiyakh i Rikettsiozakh (Studies on Rickettsiae and Rickettsial Diseases), 3rd ed., Moscow, 1972, 496 pp

Translation:

Contents

Foreword to the third edition...

3

GENERAL PART

Chapter I. Pathogenic Rickettsiae, General Characteristics, and Classification of Rickettsial Diseases...

4

Chapter II. Morphology and Morphogenesis of Rickettsiae...

18

Chapter III. Biology and Variability of Rickettsiae...

36

Chapter IV. Rickettsial Diseases in Bloodsucking Arthropods...

40

Chapter V. Experimental Forms of Rickettsial Diseases in Animals...

63

Chapter VI. Culturing of Rickettsiae...

81

Chapter VII. Reaction of Rickettsiae to Physical and Chemical Agents and Their Survivability in the Environment...

103

Chapter VIII. Serology and Serodiagnosis of Rickettsial Diseases...

109

Chapter IV. Principal Methods of Working with Rickettsiae...

141

SPECIAL PART

Chapter I. Epidemic Typhus and Brill-Zinsser's Disease...

171

Chapter II. Endemic or Murine Typhus...

231

1/2

USSR

ZDRODOVSKIY, P. F. and GOLINEVICH, Ye. M., Ucheniye o Rikettsiyakh i Rikettsiozakh, 3rd ed, 1972, 496 pp

Chapter III. Rocky Mountain Spotted Fever...	252
Chapter IV. Marseilles (Boutonneuse) Fever...	264
Chapter V. Tickborne Rickettsiosis or North Asian Tickborne Typhus...	279
Chapter VI. Other Tickborne (Ixodid) Rickettsioses...	300
Chapter VII. Rickettsialpox...	306
Chapter VIII. Scrub Typhus	318
Chapter IX. Q Fever...	333
Chapter X. Tickborne Paroxysmal Rickettsiosis...	376
Chapter XI. Trench Fever...	381
Chapter XII. Chemotherapy of Rickettsial Diseases	390
Chapter XIII. Pathomorphology and Pathology of Rickettsial Diseases...	398
Chapter XIV. Vaccinal Prevention of Rickettsial Diseases...	424

USSR

UDC 51

LUBERG, E. O. and ZDROK, A. G.

"Computing Systems by Linear Programming Methods"

Moscow, "Energiya," 1972, 80 pp, illustrated (from RZh--Matematika, No 10, 1972, Abstract No 10V602K)

Translation: Chap. 1, General approach. Chap. 2, Peculiarities of computing electronic circuits by linear programming methods. Chap. 3. Examples in the practical use of linear programming methods for designing electronic circuits.

1/1

USSR

UDC: 51:621.391

LUBERG, E. O., ZDROK, A. G.

"Calculation of Circuits by Linear Programming Methods"

Moscow, Raschet skhem metodami lineynogo programmirovaniya (cf. English above), "Energia", 1972, 80 pp, ill. 21 k. (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V602K)

Translation: Chapter I. General Propositions. Chapter II. Particulars of Calculating Electronic Circuits by Linear Programming Methods. Chapter III. Examples of Practical Use of Linear Programming Methods for Calculating Electronic Circuits.

1/1

- 43 -

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ELECTROMAGNETIC PROCESSES IN THE AUTOEXCITATION SYSTEM OF
GENERATORS WITH MAGNETIC AMPLIFIERS -U-
AUTHOR--(03)-ZDROK, A.G., SALYUTIN, A.A., MOKHOV, V.Y.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ELEKTRICHESTVO, NO 3, 1970, PP 47-52
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR., ENERGY
CONVERSION (NON-PROPULSIVE)
TOPIC TAGS--ELECTRIC GENERATOR, ELECTROMAGNETIC EFFECT, MAGNETIC AMPLIFIER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1748 STEP NO--UR/0105/70/000/003/0047/0052
CIRC ACCESSION NO--AP0135319
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135319

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ARTICLE DEALS WITH DIFFERENT SELF EXCITATION SYSTEMS OF THREE PHASE GENERATORS WITH A SINGLE PHASE AND TWO PHASE ASSYMETRICAL VOLTAGE SUPPLY. ELECTROMAGNETIC PROCESSES IN THE SELF EXCITATION CIRCUIT WITH A MEDIAN POINT UNDER CONDITIONS OF ITS SUPPLY WITH ASSYMETRIC TWO PHASE VOLTAGE OF THE SOURCE IS DISCUSSED. THE ANALYSIS WAS CARRIED OUT WITH USE OF APPROXIMATION OF THE MAGNETIZATION CURVE OF THE CORES OF MAGNETIC AMPLIFIER BY TWO SLANTING LINES IS DISCUSSED. ANALYTICAL EXPRESSIONS WERE DERIVED OF VOLTAGES AND CURRENTS FOR COMMUTATION AND EXTRA COMMUTATION OPERATION OF VALVES WHICH MADE IT POSSIBLE TO DETERMINE CHARACTERISTICS OF THE CONTROL OF MAGNETIC AMPLIFIER. RESULTS OF THE ANALYSIS HAVE BEEN CONFIRMED BY EXPERIMENTAL INVESTIGATIONS.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RATE OF THE PHOSPHORIC ACID DECOMPOSITION OF MAGNESIUM CONTAINING
PHOSPHORITES -U-
AUTHOR-(03)-NABIYEV, M.N., VISHNYAKOVA, A.A., ZOUKOS, A.T.
COUNTRY OF INFO--USSR
SOURCE--UZB. KHIM. ZH. 1970, 14(2), 7-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--PHOSPHATE, PHOSPHORIC ACID, CHEMICAL DECOMPOSITION, ROCK,
MAGNESIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0321 STEP NO--UR/0291/70/014/002/0007/0008
CIRC ACCESSION NO--AP0137426
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BETTER UTILIZATION OF THE RAW MATERIAL IN THE PRODUCTION OF DOUBLE SUPERPHOSPHATE BY TREATMENT OF MG CONTG. PHOSPHATE ROCK CONCS. WITH H SUB3 PO SUB4 WAS STUDIED TO TRY TO ENHANCE THE RATE OF DECOMP. UNDER MANUFG. CONDITIONS THE DECOMP. OF THE MG CONTG. SECONDARY PHOSPHATE WAS SMALLER THAN 70PERCENT AND THE REACTION RATE WAS NEGLIGIBLY TIME DEPENDENT. EQUIL. DECOMP. IS ACHIEVED IN 2-5 MIN AND THEN THE PROCESS IS RAPIDLY SLOWED BY REACTION PRODUCTS FORMING, PROBABLY IMPENETRABLE FILMS ON THE PHOSPHATE GRAINS. THE DESIRED INTENSIFICATION OF DECOMP. CAN BE ACCOMPLISHED BY AN INCREASE OF THE LIQ. TO SOLID PHASE RATIO WHICH, HOWEVER, ALTERS THE PRODUCTION SCHEME IN PRINCIPLE. THEREFORE, INTRODUCTION OF NO SUB3 PRIME NEGATIVE INTO THE SYSTEM IS PREFERABLE FOR PROMOTING OF THE PROCESS RATE.

FACILITY: INST. KHIM., TASHKNET, USSR.

UNCLASSIFIED

USSR

UDC 621.3.035.2

PEREVEZENTSEV, V. P., ZHUNDA, A. N., ZEBERIN, A. G., and SINEL'NIKOVA, L. V.

"On the Utilization of Graphites as Materials for Aluminum Evaporators"

Moscow, Tsvetnyye Metally, No 7, Jul 71, pp 40-43

Abstract: Graphites possess the most satisfactory combination of properties for use as materials for aluminum evaporators. The usefulness of three brands of graphite with different porosities, GYZ, MPG6, and V-2(2), the two first produced by electrode technology, the last by thermomechanical processing of the charge, was experimentally investigated. It was found that small boats of graphites with porosities $< 1\%$, like graphites of the type V-2(2), are close to industrial small boats of titanium diboride in their performances, but they possess a higher utilization factor. The use of graphites of the type V-2(2) without coating is recommended for parts working in the atmosphere of Al vapors but not having a direct contact with Al, e.g., for heaters. For evaporative parts, graphites of the type V-2(2) with carbide coatings are recommended. Four illustrations, three tables, fourteen bibliographic references.

1/1

USSR

UDC [621.357.7:669.587]:669.872

AKHMETOV, T. Z., TOYBAYEV, B. K., and ZEBREVA, A. I.

"Cementation of Indium and Antimony by an Amalgam of Zinc"

Izv. vyssh. ucheb. zavedniy. Khimiya i khim. tekhol. (Bulletin of the Institute of Higher Learning. Chemistry and Chemical Technology), 15, No 10, 1972, pp 1570-1573 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L330 by I. G. Abidov)

Translation: A radiochemical method was used to study the behavior of In (III) and Sb (III) during amalgam cementation (AC) at 24°C in the following solutions: 4M H_2SO_4 , 3M HCl, and 3M KOH- 0.1M $KNaC_4H_4O_6$. Sb was cemented in the AC in all the solutions examined. In this case, part of the Zn was bound up with the Sb in the intermetallic structure. The In was cemented in the AC only from the HCl and alkali solutions. If there were no free Zn in the amalgam and if Sb were present in the solution, then In earlier in the AC cemented the Sb. In this case, In may again almost completely come into solution but the Zn bound up with the Sb remains in the amalgam.

1/1

1/2 016
UNCLASSIFIED
TITLE--THERMOCROMIC PROPERTY OF AN AQUO-TETRACHLORO COMPLEX OF COBALT -U-
PROCESSING DATE--20NOV70
AUTHOR--(03)-GOGORISHVILI, P.V., GOGORISHVILI, D.A., ZEDELASHVILI, YE.N.
COUNTRY OF INFO--USSR
SOURCE--SOBOSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 61-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COBALT COMPLEX, CRYSTAL, THERMAL EFFECT, COLOR, CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1235
STEP NO--UR/0251/70/057/001/0061/0063
CIRC ACCESSION NO--AP0128651
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLN. OF GUANADINE HYDROCHLORIDE AND COCL SUB2.6H SUB2 O IN A 2:1 MOLAR RATIO WAS EVAPD. ON A H SUB2 O BATH, WASHED WITH ET SUB2 O, DRIED, AND SEALED IN AMPULS. THE CRYSTALS WERE PINK AT SMALLER THAN 30-5DEGREES AND BLUE AT GREATER THAN 30-5DEGREES. THE PROCESS WAS REVERSIBLE. THE FORMULA OF THE PINK FORM WAS (GUH) SUB2 COCL SUB4.5H SUB2 O, WHERE FUH IS CN SUB3 H SUB6 PRIME POSITIVE. DRYING IT OVER CONCD. H SUB2 SO SUB4, LOSS IN WT. 23.43PERCENT, GAVE THE BLUE FORM. IN VACUO THE BLUE FORM LOST ITS REVERSIBILITY. BUT EXPOSURE TO H SUB2 O VAPOR RESTORED THE PINK FORM AND THE THERMOCHROMIC CHARACTERISTIC. AT 30DEGREES THERE IS NO LOSS IN WT. BUT THE CRYSTALS ARE BLUE. AT 69DEGREES 3 MOLS. OF H SUB2 O WERE DRIVEN OFF. APPARENTLY AN INTERMEDIATE COMPO., (GUH) SUB2 (COCL SUB4 (2H SUB2 O)).3H SUB2 O, IS FORMED. FACILITY: INST. FIZ. ORG. KHIM., TBILISI, USSR.

UNCLASSIFIED

USSR

Radiobiology

UDC 616.72-018.3-001.29-091

ZEDGENIDZE, G. A., MODYAYEV, V. P., GULYAYEV, V. A., and ANKINA, M. A.,
Institute of Medical Radiology, Academy of Sciences USSR

"Structural Changes in Articular Cartilage After Irradiation"

Moscow, Meditsinskaya Radiologiya, No 3, 1972, pp 3-10

Abstract: Electron-microscopic and histochemical study of articular cartilage in rabbits revealed a greater heterogeneity of structure than expected. Of the seven structural zones distinguished (acellular, surface, transitional, isogenous groups, columns, hypertrophic cells, and primary calcification), those of the transitional and isogenous groups proved to be the most sensitive to a single dose (900 rad) of local gamma radiation. Within a day of exposure, cells of different sizes and shapes and empty lacunae appeared in these two zones. Vacuolization or wrinkling of the cytoplasm, irregular distribution of chromatin in the nuclei, and various stages of karyopyknosis and karyolysis were characteristic. These changes became increasingly pronounced until day 14 when all the zones were affected. Most of the changes were reversible and signs of restoration (proliferation of cells) began to appear about day 17 in the upper part of the cartilage. The regenerative process was completed by day 30 and the articular cartilage remained unchanged thereafter, but it looked "older" than the tissue of the control animals.

1/1

USSR

ZEDGINIDZE, I. G. and DEMURISHVILI, Z. N.

"Change in Levels of Factors and Linear Drift in Factor Plans and Plans in a Simplex"

Tr. Problem. Lav. Avtomatiki i Vychisl. Tekhn. Gruz. Politekhn. In-t [Works of the Problems Laboratory of Automation and Computer Technology, Georgian Polytechnical Institute], 1972, No 3, pp 153-177 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V179)

Translation: The following model is studied:

$$y = f(x_1, \dots, x_n) + \phi(t) + \epsilon,$$

where y is the observation at point $x = (x_1, \dots, x_n)$, $f(x_1, \dots, x_n)$ is a polynomial of fixed order with unknown (to be estimated) coefficients, $\phi(t)$ is the linear drift based on the observations and ϵ is the measurement error. The area of measurements, it is assumed, is a lattice either on a hypercube or on a simplex. The problem of unbiased estimation of the unknown parameters by means of known experimental plans (factor plans and plans on a simplex) is studied. The order of conduct of the experiments is selected so that the number of changes in values of certain variables from x_1, \dots, x_n during the process of conduct of all experiments is not great.

V. Brodskiy

1/1

- 23 -

LOBZHANIDZE, Sh. S., ZEDGINIDZE, I. G.

"Certain Specific Plans for Studying the Properties of Mixtures"

Tr. XV Nauchno-tekhn. Konferentsii Prof.-prepodavat. Sostava i Nauchn. Rabotn. Probl. i Otrasl. Labor. Gruz. Politekh. In-t. Vyp. 17 [Works of 15th Scientific and Technical Conference of Teaching Staff and Scientific Workers from Problems Laboratory Branch of Georgian Polytechnical Institute, No 17], Tbilisi, 1970, pp 64-68, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V179 by V. Granovskiy).

Translation: The problem of planning regression experiments in study of the properties of mixtures depending only on the concentration of mixture components is studied. As we know, the factor space in this case is a $(p - 1)$ -dimensional simplex $x_1 + x_2 + \dots + x_p = 1$, each point of which corresponds to a definite mixture. There are various experimental plans for estimation of the coefficients of the polynomial describing the properties of the mixture. All of these plans contain a certain number of points on the faces of the simplex. Since each such point corresponds to a mixture containing certain components with zero proportions, at these points the properties of the mixture are not fully manifested. This work studies plans for second order polynomial regression containing points with nonzero proportions x_i of all p components.

1/1

- 17 -

ZEFEL'D, V. V.

PSYCHOPHYSIOLOGICAL ASPECTS OF LAYOUT OF MAN-OCCUPIED COMPARTMENTS
[Article by V. V. Zefel'd and L. P. Salamonov, Moscow, Komuchekaya Nizhaya
i Meditsina, Vol. 6, No. 1, pp 67-73, 1972, submitted for publication
28 July 1971]

37KS 55467
10-6-80 1972
UDC 625.75.042

Abstract: This paper described approaches to the layout of manned compartments in future spacecraft on the basis of the spatial parameters of the human visual and motor fields. It discusses the effectiveness of different layouts as illustrated by various United States space vehicles.

In both the Soviet and foreign literature the problems related to the layout of the man-occupied part of future interplanetary spacecrafts are discussed for the most part from the engineering and design point of view. This is not surprising, since it is precisely engineers and designers who create the vehicles which enable us to escape beyond the earth's limits and to perform flights to distant planets. However, in their recommendations pertaining to configuration and size, the total number and relative arrangement of compartments, man's psychophysiological peculiarities, especially the specific nature of his motor activity, are not always taken into account.

Accordingly, it is desirable to determine the spatial parameters of manned compartments of future interplanetary ships by first deciding on the layout of the rooms and their relative position. In order to create the necessary convenience and make rational use of working time the selected rooms must be broken down into different functional groups combined on the basis of the similarity of work performed (operations, housekeeping, etc.; Fig. 1); between the functional groups and the individual rooms within each group. It is necessary to establish the lines for basic intercommunication: transport for man and objects, visual and direct verbal. The functional groups of rooms are arranged in four compartments (stories). Due to the great height of the hall for physical exercises it is arranged (vertically) in two compartments (stories) (Fig. 2, a). The remaining rooms of the functional groups (see Fig. 1) are arranged in the other two compartments (stories). The diagrams given here

1/2 009
UNCLASSIFIED
TITLE--STEREOCHEMICAL STUDIES. VI. CONFORMATIONS OF 2, SUBSTITUTED
TETRAHYDROPYRANS STUDIED BY AN NMR METHOD -U-
AUTHOR--(021)-ZEFIROV, N.S.; SHEKHTMAN, N.M.
PROCESSING DATE--30OCT70
COUNTRY OF INFO--USSR
SOURCE--ZH. GRG. KHIM. 1970, 6(4), 863-5
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--STEREOCHEMISTRY, HETEROCYCLIC OXYGEN COMPOUND, NMR SPECTRUM,
MOLECULAR STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2085
STEP NO--UR/0366/70/006/004/0863/0865
CIRC ACCESSION NO--AP0125672
UNCLASSIFIED

2/2 009
CIRC ACCESSION NO--AP0125672

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NMR SPECTROSCOPIC EVIDENCE IS PRESENTED IN SUPPORT OF THE PREDOMINANTLY AXIAL CONFORMATION (OF X) IN 2, (X, SUBSTITUTED), TETRAHYDROPYRANS (I) (X EQUALS H, SUBB, NCO, OR TERT, BUDD) AND OF THE EQUATORIAL CONFORMATION OF X IN I (X EQUALS NHAC). THE AXIAL CONFORMATION IS BROUGHT ABOUT BY THE REPULSION BETWEEN O AND X IN I (ANOMERIC EFFECT).
LONONOSOVA, MOSCOW, USSR. FACILITY: MOSK. GOS. UNIV. IN.

UNCLASSIFIED

019
UNCLASSIFIED
TITLE--ADDITION REACTIONS OCCURRING AT THE DOUBLE
DIHYDROTHIOPYRAN -U-
AUTHOR--(04)-BLAGOVESHCHENSKIY, V.S., KAZIMIRCHIK, I.V., IVANOVA, M.I.,
ZEFIROV, N.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 877-9
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CONDENSATION REACTION, THIOL, HETEROCYCLIC OXYGEN COMPOUND,
PHOSPHORUS SULFIDE, ORGANIC SYNTHESIS, ORGANIC SULFUR COMPOUND, ORGANIC
PHOSPHORUS COMPOUND, PESTICIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2067
CIRC ACCESSION NO--AP0125654
STEP NO--UR/0366/70/006/004/0877/0879
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125654

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CONDENSATION OF DELTA PRIME2 DIHYDROTHIOPYRAN (I) WITH ALCS. IN ET SUB2 O SOLN. CONTG. HCL GAVE 2 (OR 3), R, SUBSTITUTED, TETRA, HYDROPYRANS (II) (R IS OME, OBU). SIMILARLY, TREATING I WITH BUSH GAVE II (R EQUALS SBU). I WITH DIALKYL DITHIOPHOSPHATES GAVE II (R IS SP(:S)(OME) SUB2 OR SP(:S)(DET) SUB2). THE REACTIONS OF I WITH TETRA-ET BISTHIOPHOSPHATE GAVE 2,4,3,R PRIME1, DI, SUBSTITUTED, TETRAHYDROPYRAN (III) (R AND R PRIME1 ARE SP(:O)(DET) SUB2). SIMILARLY, I REACTED WITH HG(OAC) SUB2 IN MECH TO GIVE III (R EQUALS OME, R PRIME1 EQUALS HGOAC), WHICH WAS CONVERTED INTO III (R EQUALS OME, R PRIME1 EQUALS HGCL). II AND III ARE POTENTIAL PESTICIDES. FACILITY: MOSK. GOS. UNIV. IN. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 021
TITLE—CONFORMATIONAL ANALYSIS OF 4-CYCLOHEXENES USING HETERONUCLEAR
DOUBLE RESONANCE —U—
AUTHOR—(04)—ZEFIRGV, N.S., SERGEYEV, N.M., CHEKULAYEVA, V.N., GURVICH,
L.G.
COUNTRY OF INFO—USSR
SOURCE—DOKL. AKAD. NAUK SSSR 1970, 190(2), 345-7
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—CYCLOHEXENE, PROTON, NMR SPECTRUM, CHEMICAL SUBSTITUENT,
ORGANIC NITRO COMPOUND, BUTADIENE, NITRILE, ACRYLATE, ORGANIC SYNTHESIS
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/1081
CIRC ACCESSION NO—AT0124738
STEP NO—UR/0020/70/190/002/0345/0347
UNCLASSIFIED

272 021
CIRC ACCESSION NO—AT0124738 UNCLASSIFIED PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. FROM PROTON NMR SPECTRA OF
CYCLOHEXENES WITH CHO, CO SUB2 ME, CN AND AC SUBSTITUENTS IT WAS
CONCLUDED THAT 3,CYCLOHEXENE,1,CARBOXALDEHYDE HAS 70PERCENT CONFORMATION
1 (X EQUALS CHO), AND THAT THE CORRESPONDING CARBOMETHOXY COMPO. HAS
85PERCENT CONFORMATION 1 (X EQUALS CO SUB2 ME). KEEPING O SUB2
NCH:CHCN WITH BUTADIENE,1,1,4,4,D SUB4 IN THE PRESENCE OF HYDROQUINONE 3
DAYS GAVE 70PERCENT TRANS,1,NITRO,2,CYANO,4,CYCLOHEXENE, 3,3,6,6,D SUB4,
M. 93-5DEGREES; THE ME TRANS,2,ACETYL,4,CYCLOHEXENE,1,CARBOXYLATE,
3,3,6,6,D SUB4, B SUB1 124-6DEGREES, M PRIME20 SUBD 1.4770 WAS PREPD.
FROM THE DIENE AND ME ACETYLACRYLATE IN 15 HR AT 100DEGREES IN MEPH.
FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.391.14

NOTKIN, L. R. and ZEPİROV, V. Ye.

"Analyzing the Complex Spectra of Pulse Signals"

Moscow, Radiotekhnika, Vol. 25, No. 11, 1970, pp 25-28

Abstract: A method of analyzing complex spectra is given in this article which is not subject to the defects of simultaneous and successive analytical methods. In this method, the basic operation for determining the components of the amplitude and phase spectra of the signal involves summation of the vectors to which the input signal is transformed. The authors offer two variants of apparatus for realizing the spectrum analysis with oscillographs using circular scanning. The block diagrams of both setups are given together with illustrative diagrams of the type of figure these systems yield and their interpretation. Much less work is involved in the methods suggested by the article since the basic computations are automated, and the arduousness of point-by-point plotting is avoided. The authors assert that the method and its variants may be used in the solution of practical problems in the various branches of electronics.

1/1

USSR

UDC 621.373.826:621.396

ZEGE, E. P., IVANOV, A. P., KATSEV, I. L., KARGIN, B. A.,
KUZNETSOV, S. V., and MIKHAYLOV, G. A.

"Some Problems of Optical Pulse Radar in Natural Dispersing
Formations"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 337-341 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10D440)

Translation: A method is given for computing the signal/noise ratio
of an optical radar system combining receiver and transmitter,
under the condition that the signal is propagated in a medium char-
acterized by the probability Λ of photon survival. With increasing
distance between the object and the transceiver, the signal/noise
ratio varies according to the law

$$\gamma \sim \sqrt{\gamma} \exp -(\gamma - 1 + \Lambda)\gamma,$$

where γ is the distance between the object and the radar and Λ is
the eigenvalue of the characteristic equation. Bibliography of
five. A. L.

USSR

Z

UDC 535.361

ZEGE, E. P., KATSEV, I. L., MAKAREVICH, S. A.

"Characteristics of the Light Field in Weakly Absorbent Media"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 12, No 6, 1970, pp 1137-1139

Abstract: This short mathematical article deals with formulas developed by G. V. Rozenberg for the brightness coefficient, the diffuse reflection, and the conductance of light in weakly absorbent layers of large optical thickness. Although the determination of the parameters of the equation can be done experimentally or through the proper computations, the authors assert that there is no need for determining all these parameters experimentally. They then proceed to work out equations through which the parameters can be found. The two sources they cite of information on the Rozenberg equations are a paper written by Rozenberg for the collection Spektroskopiya svetorasseivayushchikh sred (The Spectroscopy of Light-Dispersive Media), Minsk, 1963, p 5, and a paper written by A. P. Ivanov and G. K. Il'ich for the journal named above (2, 356, 1965).

1/1

USSR

UDC 535.36

BUSHMAKOVA, O. V., ZEGER, E. P., and KATSEV, I. L.

"Asymptotic Formulas for the Brightness Coefficients of Thick Layers of a Dispersive Medium"

Minsk, Doklady Akademii Nauk BSSR, Vol 15, No 4, 1971, pp 309-311

Abstract: This article concerns recent work done on the problem of obtaining brightness coefficients for thick layers of a dispersive medium with an arbitrary indicatrix of dispersion. The authors cite G. V. Rozenberg's approximation formulas, which apply to low-absorption media and which have been used extensively to solve geophysical and spectroscopic problems. They explain the ways in which these formulas are related to the formulas developed by V. V. Sobolev for brightness coefficients which have been averaged with respect to the azimuth and which apply to the case of arbitrary absorption. They show that the two sets of formulas coincide to a specified degree of accuracy when $\int_0^{\pi} M^2 g(M) d\mu = 1/3$ (M is the cosine of the angle of dispersion of $g(M)$ is the angular distribution of the brightness of the light which has passed through a purely dispersive layer). This condition is fulfilled quite well for a broad class of indicatrices.

1/1

ZEGE, E. P. and KARDASH, L. I.

UDC 551.521.3:551.463.5:535.36

"Light Field in the Depth Mode With Polarization Taken Into Account"

Minsk, Zhurnal Prikladnoy Spektroskopii, vol 17, No 5, 1972, pp 861-871

Abstract: The problem with which this paper is concerned is that of finding the light field in the depth of an optically thick or semi-infinite layer of an absorbing and scattering medium. The paper examines the depth mode in a medium with scattering centers of arbitrary dimensions and form. In this theoretical treatment it is assumed only that the medium is symmetrical and the particles are chaotically oriented and are uniformly distributed in the layer, an assumption that always holds true in real dispersing media such as seawater and clouds. The authors begin their analysis with the statement of a matrix which describes the linear transformation law of the Stokes vector in a single scattering. A plane, semi-infinite medium whose boundary is illuminated by an infinitely wide parallel light beam is considered; a stationary angular

1/2

USSR

ZEGE, E. P., et al, Zhurnal Prikladnoy Spektroskopii, vol 17, No 5, 1972, pp 861-867

distribution of the Stokes vector components, known as the depth mode, is in the depth of the scattering medium at a sufficient distance from the boundary. The matrix for the angular scattering is determined, and a system of integral equations for the Stokes parameters in the depth mode is derived. The equations are numerically solved and the light field is investigated.

2/2

- 69 -

USSR

UDC: 548.733

ZEGE, V. N.

"Camera Adjunct to a Diffractometer"

Minsk, Izvestiya Akademii Nauk BSSR--Seriya fiziko-tekhnicheskikh nauk, No 1, 1972, pp 93-96

Abstract: Cameras added to diffractometers usually fall into two categories: one for operation in low temperatures, the other for operation in high. Thus, one of each must be used in a broad range of temperatures, and conditions of the experiments are no longer identical for the two temperature areas. The camera described in this paper does not suffer from this defect. It is an evacuated device, with a limiting pressure of $5 \cdot 10^{-5}$ mm Hg, and permits temperature measurements in the 77-1173° K range, the lowest temperature being that of liquid nitrogen. It is made to work with diffractometers of the DRON-1 and URS-50IM types, and can be set up with GUR-3, GUR-4, and GUR-5 goniometers. A cross-sectional diagram of the camera is provided and an explanation of its operation given. It was tested with the DRON-1 diffractometer and gave precise results. An additional advantage of the instrument is that it requires no temperature control devices in the 78-620° K range. The author is connected with the Physico-technical Institute of the Belorussian Academy of Sciences.

1/1

172 009
UNCLASSIFIED
TITLE--SYNTHESIS OF THE 2,4,6,TRICHLOROPHENYL ESTER OF THE PENTAPEPTIDE
GLY-ALA-GLY-GLU-GLY -U-
AUTHOR--(03)-ZEGELMAN, A.B., YUSUPOV, T.YU., POROSHIN, K.T.
PROCESSING DATE--30OCT70
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(3), 22-3
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEPTIDE, ESTER, CHLORINATED ORGANIC COMPOUND, BENZENE
DERIVATIVE, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0728
CIRC ACCESSION NO--AT0121387
STEP NO--UR/0425/70/013/003/0022/0023
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0121387

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (IN THIS ABSTR. Z EQUALS PHCH SUB2
O SUB2 C AND 2,4,6, TRICHLOROPHENYL EQUALS C SUB6 H SUB2 CL SUB3.
ALANINE AND GAMMA METHYLGLUTAMATE ARE IN THE L FORM). AS PART OF A
STUDY OF THE STRUCTURE OF SILK FIBROIN THE PENTAPEPTIDE
Z-GLY-ALA-GLY-GLU(OME)-GLY-OC SUB6 H SUB2 CL SUB3 (I) WAS PREPD. USING
THE MIXED CARBOXYLIC CARBONIC ANHYDRIDE METHOD WAS PREPD. Z-ALA-GLY-OME,
M. 96DEGREES. REMOVAL OF THE Z GROUP IN TURN YIELDED H-ALA-GLY-OME.HBR
(II), M. 160DEGREES. Z-GLY-ALA-GLY-OME (III), M. 114-15DEGREES, WAS
PREPD. BY THE ADDN. OF Z-GLY-OH TO II. III WAS CONVERTED INTO THE
CORRESPONDING HYDRAZIDE (IV), M. 182DEGREES. THE Z GROUP WAS REMOVED
FROM Z-GLY-OC SUB6 H SUB2 CL SUB3 (M. 213DEGREES) AND THE DEPROTECTED
ESTER COMBINED WITH Z-GLU(OME)-OH TO YIELD THE FULLY PROTECTED DIPEPTIDE
Z-GLU(OME)-GLY-OC SUB6 H SUB2 CL SUB3 (V), M. 118DEGREES. THE Z GROUP
WAS REMOVED FROM V AND THE DIPEPTIDE ESTER ISOLATED AS THE HBR SALT (VI)
IN THE FORM OF AN OIL. IV AND VI WERE COMBINED BY THE AZIDE METHOD TO
YIELD I, (ALPHA) PRIME21 SUBD MINUS 17.6DEGREES (DMF). FACILITY:
TADZH. GOS. UNIV. IM. LENINA, DUSHANBE, USSR.

UNCLASSIFIED

Refractory Materials

USSR

UDC 666.764:621.928.37

MARANTS, A. G., GUTMAN, V. I., All-Union Institute of Refractories; FRANTOVA, E. S., ZEGER, I. Ya., VASILIVITSKIY, A. V., KREYDLIN, P. N., All-Union Scientific Research, Planning, and Design Institute of Metallurgical Machinery; ROMANOVSKIY, L. B., KOREN, L. N., and KOSTYRYA, Yu. F., Dnepropetrovsk Metallurgical Institute

"Prospects of the Application of the Melting Cyclone for the Production of Melted Refractories"

Moscow, Ogneupory, No 5, 1973, pp 50-54

Abstract: The process of cyclone melting was investigated with a view to produce melted refractories of the magnesium-spinel and brazilite-corundum types. Experiments were carried out at the Institute of the Problems of Material Science of the Academy of Sciences UkrSSR. The experiments indicated the possibility of applying melting cyclones with the use of a blast enriched with oxygen for the production of cast fused refractories with a 1800-1900°C fusion temperature in which the melt aggregates in the warming forehearth for aftercasting into molds. The dust removal in cyclone melting does not exceed 5%, thus ensuring the production of a melt which is close to the initial charge in chemical composition. The optimum content of oxygen in the blast at an approximate natural gas consumption of 1.5 nm³/kg charge was determined.

1/2

- USSR

MARANTS, A. G., et al., Ogneupory, No 5, 1973, pp 50-54

The properties of the produced materials are analyzed. Four figures, three tables, three bibliographic references.

2/2

- 27 -

Aeronautical

USSR

UDC 53.082.73.537.228.1

ZEGZHDA, S. A., YUSHKOV, M. P., Leningrad State University imeni
A. A. Zhdanov

"Determination of the Frequencies of Fixed Piezoaccelerometers
on the Basis of a Three-Mass Scheme"

Leningrad, IVUZ, Priborostroyeniye, No 11, 1970, pp 90-93

Abstract: Formulas are developed for finding the parameters of
a three-mass scheme, the lowest natural frequencies of which
coincide with sufficient precision with the lowest frequencies
of a piezoaccelerometer which is regarded as a system with dis-
tributed parameters. 3 figures, 3 bibliographic entries.

1/1

USSR

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203730006-8"

ZEBER, K. Ye., MURZICH, Ye. V., ZELENOV, L. S., PRON'KO, L. A., All-Union
Scientific Research Institute of Heat Engineering imeni F. E. Dzerzhinskiy

"A Method of Controlling the 'Fuel-Oxidizer' Ratio"

Author Certificate USSR, Class F 23n 1/02, No 295945, claimed 23.12.68,
published 6.04.71 (from Referativnyy Zhurnal, Aviatsionnyye i Raketnyye
Dvigateli, No 11, Nov 71, Abstract No 11.34.70 P)

Translation: There is patented a method for regulating the "fuel-oxidizer"
ratio in the combustion chamber according to a command signal characterizing
a monitored parameter that is linked to the combustion. The method is dis-
tinguished by the fact that with the aim of increasing the precision, re-
liability, and response speed of regulation, use is made, as the command
signal, of the temperature of one or several (according to the number of in-
jectors) solid unshielded bodies with a high thermal conductivity, for
example, metal bodies, which are placed at the base of the jet in the shear
plane of the injector output nozzles. The method is distinguished by the
fact that as a solid thermally conductive body, use is made of design ele-
ments of the combustion chamber, for example, the injector output nozzle.
1 figure.

1/1

1/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINING THE CONTACT RIGIDITY AND ELASTICITY OF MOUNTING
ACCELEROMETERS -U-
AUTHOR--(04)-GAYUN, V.V., GUSEV, O.P., ZEGZHDA, S.A., YUSHKOV, M.P.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY.
PRIBOROSTROYENIYE, NO 2, 1970, PP 102-106
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--ACCELEROMETER, MECHANICAL FASTENER, ELASTICITY, BUTT WELDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1646

STEP NO--UR/0146/70/000/002/0102/0106

CIRC ACCESSION NO--AT0123484

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0123484

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASIC RESULTS ARE PRESENTED FROM
AN EXPERIMENTAL INVESTIGATION OF THE CONTACT RIGIDITY OF BUTT JOINTS.
ON THE BASIS OF THESE RESULTS, SEMIEMPIRICAL RELATIONSHIPS ARE OBTAINED
FOR CALCULATING FLAT BUTT JOINTS AND THREADED JOINTS OF ACCELEROMETERS.
THE THEORETICAL AND EXPERIMENTAL DATA ARE COMPARED. FACILITY:
LENINGRAD STATE UNIVERSITY.

UNCLASSIFIED